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Filed on 4 November 2002 (04.11.2002)</p> <p>(71) Applicant (for all designated States except US): BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM [US/US]; 201 West 7th Street, Austin, TX 78701 (US).</p> <p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): DE CROMBRUGHE, Benoit [US/US]; 911 Old Lake Road, Houston, TX</p> | <p>77057 (US). AKIYAMA, Haruhiko [JP/US]; 7171 Buffalo Speedway, Apt #2014, Houston, TX 77025 (US).</p> <p>(74) Agent: BERESFORD, Sharon, A.; Fulbright & Jaworski L.L.P., 600 Congress Avenue, Suite 2400, Austin, TX 78701 (US).</p> <p>(81) Designated States (<i>national</i>): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.</p> <p>(84) Designated States (<i>regional</i>): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published:
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(54) Title: HA4, A NEW OSTEOBLAST- AND CHONDROCYTE-SPECIFIC SMALL SECRETED PEPTIDE, COMPOSITIONS AND METHODS OF USE

(57) Abstract: A polypeptide designated HA4, expressed selectively by bone tissue, is provided. Transgenic animals that fail to express HA4 have bone formation abnormalities reflective of osteoporosis. Also provided are methods for promoting bone formation by increasing the activity or expression of HA4, methods of diagnosing or treating bone degenerative diseases, and methods of screening for drugs that alter bone formation.